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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,905	04/14/2004	Matthew R. Darr	BUS-026977 (16463-439)	6105
7590 09/06/2005			EXAMINER	
John S. Beulick Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102			BROUSSARD, COREY M	
			ART UNIT	PAPER NUMBER
			2835	
DATE MAILED: 09/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/823,905	Applicant(s) DARR ET AL.	
	Examiner Corey M. Broussard	Art Unit 2835	

(Am)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 2, 4, 6, 8, 9, 11, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Douglass et al. (PN 6,566,996). With respect to claim 1, Douglass teaches a fuse state indicator comprising: an extension member (50) having a curvature (see Fig. 3, the extension member has a curvature at the corners and curved retaining members 86 and retaining projections 58); a transparent lens (76) coupled to said extension member; a readily combustible substance (70) adjacent the lens; a secondary fuse link (32) adjacent said combustible substances, said readily combustible substance substantially completely ignited and consumed when said secondary fuse link opens (col 4, lines 43-47); and a curved backing layer (56, is curved along corners 90, see Fig. 3) adjacent said secondary fuse link and complementary to the curvature of the extension member (see Fig. 2, clearly showing how the curves of the backing layer are complementary to the curves of the extension member when snapped together), said backing layer at least partially concealed by said combustible substance when viewed

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through said transparent lens before the fuse has opened (col 4 lines 62-64), said backing layer maintaining said secondary fuse link in position with respect to said combustible substance (see Fig. 2, 3, and 5).

2. With respect to claim 2, Douglass teaches a conductive clip (54) extending from a first end of said extension member (50) and configured to engage an end of said fuse body (the clips engage the opposite ends of the fuse body, through second fuse terminals 20, 22, see Fig. 1, 3, and col 3 lines 42-45).

3. With respect to claim 4, Douglass teaches a clip (54) electrically connected to said secondary fuse link (32, see Fig. 2, 4, 5, and col 3 lines 49-52).

4. With respect to claim 6, Douglass teaches wherein said secondary fuse link (32) comprises a high resistance portion and a low resistance portion (see Col 2 lines 60-64, reduced cross sectional area would create an area of higher resistance).

5. With respect to claim 8, Douglass teaches wherein said combustible substance (70) and said curved backing layer have contrasting colors (col 3, line 63).

6. With respect to claim 9, Douglass teaches wherein said backing layer (56) is flexible (col 3, lines 63-67 teaches the backing layer is made from plastic, which is known to be flexible, also in order for the backing layer to engage in the snap fit taught, the backing layer must be flexible), thereby accommodating a curvature of said extension member when attached thereto (see Fig. 2).

7. With respect to claim 11, Douglass teaches wherein said combustible substance (70) is nitrocellulose cotton (col 3, line 14).

8. With respect to claim 29, Douglass teaches a fuse state indicator for a fuse including a primary fuse element in an insulative body, the insulative body having an aperture therethrough for fuse state identification, said fuse state indicator comprising: an insulative extension member (50, would inherently be required to be insulative otherwise it would short the secondary fuse element and the indicator would not function) defining a cavity (see Fig. 3); an ignitable and combustible substance (70) received within said cavity; a secondary fuse link (32) extending across said extension member and said cavity such that said secondary fuse link is positioned adjacent said combustible substance (see Fig. 3, 5); and a flexible backing layer (56, must inherently be flexible in order for the backing layer to engage in the snap fit engagement, col 3, lines 63-67) coupled to said extension member and closing said cavity over said combustible substance, wherein said secondary fuse link is positioned between said backing layer and said combustible substance (see Fig. 5), said backing layer at least partially concealed by said combustible substance when viewed through the aperture in insulative fuse body before the primary fuse element has opened (col 4 lines 30-33), said backing layer maintaining said secondary fuse link in position with respect to said combustible substance, said combustible substance being ignited and combusted to reveal said backing layer when said secondary fuse link opens (col 4 lines 43-47).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 5, 6, 8-12, 15-18, 20, 22, and 25-29 are rejected under 35 U.S.C.

103(a) as being unpatentable over Ogle (PN 809,978) in view of Darr et al (PN 6,373,370) and Borchart (PN 4,127,837). With respect to claim 1, Ogle teaches a fuse state indicator for a cylindrical fuse body (2) with a primary fuse element (4), the indicator comprising: a window (12), a secondary fuse link (5, 7) adjacent to the window. Ogle fails to disclose a transparent lens, an extension member, a backing layer, and readily combustible substance that is completely consumed when the secondary fuse link opens. Darr teaches a fuse state indicator comprising of an extension member (42) having a curvature (curvature located at the corners and retaining projections 78, see Fig. 2), a transparent lens (40) coupled to said extension member, a curved backing layer (46, see Fig. 2, the backing layer has several curves along the edges and at the corners) adjacent to the secondary fuse link (58) and complementary to the curvature of the extension member (see Fig. 2, the curvature of the backing layer is complementary to the curvature of the retaining members 78 to enable the snap fit engagement), said backing layer at least partially concealed by the secondary fuse link when viewed through said transparent lens before the fuse has opened (col 4, lines 3-6), said backing layer maintaining said secondary fuse link in position with respect to said lens. Borchart teaches of a fuse state indicator wherein a readily combustible substance (6) is used to indicate the state of the fuse by its presence or absence (col 2 lines 43-55). Ogle is relied upon to show the conventionality of cylindrical fuses with built in indicators.

Borchart is relied upon to show the conventionality of using readily combustible substances in fuse state indicators. It would have been obvious to a person of ordinary skill in the art to combine the fuse indicator assembly of Darr with the indicator of Borchart and replace the fuse indicator of Ogle with the resulting combination for the benefit of a simple, easy to manufacture fuse state indicator for cartridge fuses.

11. With respect to claim 5, Darr suggests that the fuse state indicator (12) disclosed could be used in other types of fuses, such as cylindrical cartridge fuses (column 1 lines 47-48, and column 2 lines 17-19, and 26-29). It would have been obvious to a person of ordinary skill in the art at the time of the invention to further curve and elongate the extension member for the benefit of a better integration in the cylindrical body fuse of Ogle.

12. With respect to claim 6, Darr teaches a secondary fuse link (58) comprising of a high resistance portion (70) and a low resistance portion (66). It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the secondary fuse link of Darr with the fuse of Ogle for the benefit of a secondary fuse link having a high resistance portion for maximizing the current in the area visible by the lens, therefore insuring that the burn/break will be visible through the lens.

13. With respect to claim 8, Borchart teaches wherein said combustible substance and said curved backing layer have contrasting colors (col 2 lines 43-55).

14. With respect to claim 9, Darr teaches a flexible backing layer (46, column 3 lines 58-60 teach that the backing layer can be made from "thermoplastics, fiber board, or other materials known in the art", any of which can be flexible, also in order for the

backing layer to engage in a snap-fit method the backing layer must be flexible). It would have been obvious at the time of the invention to a person of ordinary skill in the art to use a flexible backing layer in the fuse of Ogle for the benefit of a backing layer that easily fits a curved surface.

15. With respect to claim 11, Borchart teaches wherein said combustible substance is nitrocellulose cotton (col 2 lines 2-4).

16. With respect to claim 12, Ogle teaches a tubular fuse body (2) having a first and second end (see Fig. 1), an aperture for fuse state identification (12), first and second end caps (3) coupled to said body, and a primary fuse element (4) electrically connected between said first and second end caps (see Fig. 3); and a fuse indicator comprising a secondary fuse link (5, 7) electrically connected between said first and second end caps (see Fig. 3). Ogle fails to disclose a flexible backing layer coupled to an extension member. Darr teaches a fuse indicator assembly comprising a flexible backing layer (46, column 3 lines 58-60 teach that the backing layer can be made from "thermoplastics, fiber board, or other materials known in the art", any of which can be flexible, also in order for the backing layer to engage in a snap-fit method the backing layer must be flexible) and an extension member (42), where said extension member is coupled to said backing layer maintaining said secondary fuse link in position (see Fig. 2). Borchart teaches of a fuse state indicator wherein a readily combustible substance (6) is used to indicate the state of the fuse by its presence or absence (col 2 lines 43-55). Ogle is relied upon to show the conventionality of cylindrical fuses with built in indicators. Borchart is relied upon to show the conventionality of using readily

combustible substances in fuse state indicators. It would have been obvious to a person of ordinary skill in the art to combine the fuse indicator assembly of Darr with the indicator of Borchart and modify it to replace the fuse indicator of Ogle accommodating the tubular fuse body of Ogle with the resulting combination for the benefit of a simple, easy to manufacture fuse state indicator for cartridge fuses.

17. With respect to claim 15, Darr teaches a transparent lens (40) located within an aperture (hole for lens 40 and cavity 50) for fuse state identification. Darr lacks readily ignitable and combustible substance. Borchart teaches wherein said combustible substance is positioned adjacent said aperture, at least a portion of said combustible substance is visible through said transparent lens before said primary fuse link is opened (col 2, lines 43-55). It would have been obvious at the time of the invention to one skilled in the art to combine the combustible based indicator of Borchart with the indicator assembly of Darr for the benefit of magnified fuse state indicator.

18. With respect to claim 16, Borchart teaches wherein said combustible substance and said flexible backing layer have contrasting colors (col 2 lines 43-55).

19. With respect to claim 17, Borchart teaches wherein said combustible substance is nitrocellulose cotton (col 2 lines 2-4).

20. With respect to claim 20, Darr teaches a secondary fuse link (58) comprising of a high resistance portion (70) and a low resistance portion (66). It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the secondary fuse link of Darr with the fuse of Ogle for the benefit of a secondary fuse link

having a high resistance portion for maximizing the current in the area visible by the lens, therefore insuring that the burn/break will be visible through the lens.

21. With respect to claim 22, Ogle teaches a tubular fuse body (2) having first and second ends (see Fig. 1) and an aperture for fuse state identification (12), the first and second end caps (3) coupled to said body, and a primary fuse element (4) electrically connected between said first and second end caps (see Fig. 3); a fuse indicator assembly comprising a secondary fuse link (5, 7) electrically connected between said first and second end caps (see Fig. 3). Ogle fails to disclose a readily ignitable combustible substance and flexible backing layer coupled to an extension member. Darr teaches a fuse indicator assembly comprising an extension member (42), a secondary fuse link (58), and a flexible backing layer (46, column 3 lines 58-60 teach that the backing layer can be made from "thermoplastics, fiber board, or other materials known in the art", any of which can be flexible, also in order for the backing layer to engage in a snap-fit method the backing layer must be flexible) coupled to said extension member and adjacent said secondary fuse link, said flexible backing layer maintaining said secondary fuse link in position proximate said aperture of said fuse body for visible fuse state indication. Borchart teaches of a fuse state indicator wherein a readily combustible substance (6), wherein said combustible substance is substantially completely combusted after said primary fuse element has opened, (col 2 lines 43-55). It would have been obvious to a person of ordinary skill in the art to combine the cylindrical fuse with indicator of Ogle with the structure of the fuse state indicator of Darr and modify it to accommodate a tubular fuse body and completely

combustible indicator of Borchart for the benefit of a fuse state indicator with a combustible substance better indicating the fuse state and a indicator structure easily adaptable to multiple fuse shapes and sizes.

22. With respect to claim 25, Darr teaches a transparent lens (40) located within an aperture (hole for lens 40 and cavity 50) for fuse state identification. Darr lacks readily ignitable and combustible substance. Borchart teaches wherein said combustible substance is positioned adjacent said aperture, at least a portion of said combustible substance is visible through said transparent lens before said primary fuse link is opened (col 2, lines 43-55). It would have been obvious at the time of the invention to one skilled in the art to combine the combustible based indicator of Borchart with the indicator assembly of Darr for the benefit of magnified fuse state indicator.

23. With respect to claim 26, Darr suggests that the fuse state indicator (12) disclosed could be used in other types of fuses, such as cylindrical cartridge fuses (column 1 lines 47-48, and column 2 lines 17-19, and 26-29). It would have been obvious to a person of ordinary skill in the art at the time of the invention to curve and elongate the extension member for the benefit of a better integration in the cylindrical body fuse of Ogle.

24. With respect to claim 28, Darr teaches a secondary fuse link (58) comprising of a first portion having a first resistance (70) and a second portion having a second resistance (66) said first resistance being greater than said second resistance. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the secondary fuse link of Darr with the fuse of Ogle for the benefit of a

secondary fuse link having a high resistance portion for maximizing the current in the area visible by the lens, therefore insuring that the burn/break will be visible through the lens.

25. With respect to claim 10, 18, and 27, Ogle as modified by Darr and Borchart fails to disclose a backing layer comprising of electrical tape. It is well known in the art to use electrical tape to couple and/or insulate a conductor. Selecting a known compound to meet known requirements has been held to be a matter of obvious design choice within the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) It would have been obvious to a person of ordinary skill in the art at the time of the invention to use electrical tape as the backing layer to couple the secondary fuse link to the extension member.

26. With respect to claim 29, Ogle teaches a fuse including a primary fuse element (4) and an insulative body (2) having an aperture (12) for fuse state identification, the fuse state indicator comprising: a secondary fuse link (5, 7) extending across a cavity (8). Ogle fails to disclose a ignitable and combustible substance and an insulative extension member coupled to a flexible backing layer. Darr teaches a fuse including a primary fuse element (24) in an insulative body (14) and having an aperture (window for 40 in casing 14) there through for fuse state identification, the fuse state indicator comprising: an insulative extension member (column 3 lines 65-66 disclose that the recess 50 of extension member 42 insulates the lens 40) defining a cavity (50), a secondary fuse link (58) extending across said extension member and said cavity such that said secondary fuse link is positioned adjacent said cavity; and a flexible backing

layer (46, column 3 lines 58-60 teach that the backing layer can be made from "thermoplastics, fiber board, or other materials known in the art", any of which can be flexible, also in order for the backing layer to engage in a snap-fit method the backing layer must be flexible) coupled to said extension member and closing said cavity, wherein said secondary fuse link is positioned between said backing layer and said cavity, said backing layer maintaining said secondary fuse link in position with respect to said cavity. Borchart teaches an ignitable and combustible substance (6) received within a cavity (see Fig. 2) said combustible substance being ignited and combusted to reveal said backing layer when said secondary fuse link opens. It would have been obvious to a person of ordinary skill in the art to combine the cartridge type fuse with indicator of Ogle with the structure of the fuse state indicator of Darr and combustible substance indicator of Borchart for the benefit of a fuse state indicator with a combustible substance better indicating the fuse state and a indicator structure easily adaptable to multiple fuse shapes and sizes.

27. Claims 2-4, 13, 14, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogle (PN 809,978) in view of Darr et al (PN 6,373,370) and Borchart (PN 4,127,837) above, and in further view of Sachs (PN 737,280). With respect to claims 2-4, Ogle in view of Darr and Borchart teaches the device as applied to claim 1 above, but lacks the specific teaching of conductive clips connecting to end caps and electrically connecting the secondary fuse link. Sachs teaches the conventionality of using end caps (f) and conductive clips (ends of g) to engage and electrically connect fuse state indicators to the fuse body via the end caps. It would have been obvious to a

person of ordinary skill in the art to connect the fuse indicator assembly taught by Darr with end clips as taught by Sachs in the cylindrical fuse assembly taught by Ogle for the benefit of a simple and inexpensive method of manufacturing the fuse.

28. With respect to claims 13 and 14, Ogle as modified by Darr and Borchart above teaches the device as applied to claim 12 above, but lacks first and second clips electrically connected to the end caps. Sachs teaches the conventionality of using clips (ends of g) to physically and electrically connect the secondary fuse link (middle portion of g) between the end caps (f) of the body. It would have been obvious to a person of ordinary skill in the art to take the suggestion of Sachs to use end clips to engage the secondary fuse link with the end caps of Ogle as modified by Darr and Borchart for the benefit of a simple and inexpensive method of manufacturing the fuse.

29. With respect to claims 23 and 24, Ogle as modified by Darr and Borchart above teaches the device as applied to claim 22 above, but lacks first and second conductive clips. Sachs teaches the conventionality of using conductive clips to engage and electrically connect the fuse state indicator and secondary fuse link to the end of the fuse body. It would have been obvious to a person of ordinary skill in the art to take the suggestion of Sachs to use end clips to engage the secondary fuse link with the end caps of Ogle as modified by Darr and Borchart for the benefit of a simple and inexpensive method of manufacturing the fuse.

30. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogle (PN 809,978) in view of Darr et al (PN 6,373,370) and Borchart (PN 4,127,837) above, and in further view of Oh (PN 5,418,516). Ogle as modified by Darr and

Borchart above teaches the device as applied to claims 1 and 12 above, but lacks specific teachings of a fuse element comprising of a fuse wire wrapped with a resistance wire. Oh teaches the conventionality of a fuse element made of a fuse wire (20) wrapped with a resistance wire (26). It would have been obvious at the time of the invention to a person of ordinary skill in the art to combine the wrapped fuse element of Oh with Ogle as modified by Darr and Borchart for the benefit of a secondary fuse element with increased thermal output/response during overload conditions.

Response to Arguments

31. Applicant's arguments filed 7/20/2005 have been fully considered but they are not persuasive. With respect to claim 29, the Examiner notes that the backing layer would need to be relatively rigid to obtain the snap fit engagement. However the Examiner also notes that the backing layer would have to be relatively flexible as well. Without some flexibility, the backing layer would not be able to achieve the snap fit engagement taught.

32. Applicant's arguments with respect to claims 1-18, 20-28 have been considered but are moot in view of the new grounds of rejection.

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. C.H. Cole (PN 1,927,336), Burrows et al. (PN 2,175,250), Gilbert (PN 1,246,417), and Marcus (1,265,223) supporting the conventionality of cylindrical fuses with fuse state indicators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey M. Broussard whose telephone number is 571 272 2799. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on 571 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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